

December 2006

Volume 19 Number 12

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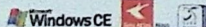
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# Editorial



## 'Tis the season

As I look around my workstation, it's not hard for me to make up my tech wish list. My dual-Athlon hot rod is now several years old, so a big ticket item would be a new Core2Duo or AM2 powered computer. And why don't we throw in a 21-inch

widescreen to replace that 17-inch LCD klunker. Those new 10-megapixel digital SLRs also look mighty attractive. But then what good is a high-res camera without a new wide-carriage photo inkjet? I don't really need a new camera, printer or computer, but what did need ever have to do with it.

I'm sure everyone out there has their own personal must-have list. For we techies, even relatively inexpensive things are welcome and appreciated – software, games, ink cartridges, photo inkjet paper, CD blanks and memory keys for data storage and soft pens to label them without damaging the foil. It's a life of riches big and small.

In stark contrast, I recently attended a meeting of a lifelong learning association. Its member organizations are primarily non-profits and other organizations that work in what used to be broadly called social welfare: food banks, soup kitchens, substance abuse clinics, spousal abuse support groups, homeless shelters, immigrant support groups, etc. One attendee ran a computer drop-in centre. He said a broad spectrum of people used the centre. He'd often have small business operators that didn't have a clue about computers sitting next to street people – and the exchange of information and tech tips went both ways.

One of the programs the centre runs is a "build your own computer" computer camp for students from families that

might not be able to afford a computer at home. Attendees pay a nominal fee and spend a weekend putting together a computer from scratch. The icing on the cake is that they get to keep the computer. These aren't full of the latest components, but they're usable, and the centre is always looking for donations of used but not too ancient computers from individuals.

The centre is also part of the Computers for Schools program set up by the federal government in 1993. Computer for Schools takes donations of old computers from government and industry, refurbishes them and distributes them at no charge to schools, libraries and non-profit learning organizations.

The tech industry – and I include tech writers in this camp – has a decidedly lopsided view of the world. The continuous focus is on the latest, greatest, newest and fastest. That's not a bad thing, but what we need to remind ourselves once in a while is that even old technology is useful. Somewhere around the Pentium III/P4 and Windows 2000/XP transition point, the pace of obsolescence slowed somewhat. There continue to be advances, but a five year old P4 running WindowsXP isn't hampered by age nearly as much as a 486 running Win95 would have been when that P4 hit the scene.

In this season of giving and receiving, by all means make your wish list long and robust – and may Santa deliver it all. But don't just stick that early P4 into a closet when the new one arrives. There's still useful life in that silicon box.

On behalf of everyone at HUB:Digital Living, I'd like to wish you all the best of the season. A big fat thanks to all our readers and advertisers for their support this past year.

Best of the season,

David Tanaka  
Editor-in-Chief

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# HUB

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# Photography Tutorial: Res it up

## Big prints from your snaps

Viewing digital images is so easy. You can use just about any device with a screen, be it computer, TV set, portable multimedia player or cell phone. Sometimes though, there's nothing like a big ol' print to smack you in the eye. I'm not talking about your measly 8x10 glossy, I mean big – as in poster size or even wall mural size.

Commercial photofinishers often provide this service. You'll need an original digital file with decent resolution. While it's possible to make a 3 x 4 foot wall poster from an image taken with a camera phone, the results will probably be disappointing.

If you have a 1200 x 1024 pixel image from a camera phone and blow it up to a metre wide, those 1200 pixels that define the width become individually quite big – almost 1mm across – and very visible. If you want the pixels to remain invisible to the naked eye, you need to keep them small, which means you need more than 1200 pixels to fill up that metre of width.

This is where interpolation comes in. Interpolation or "res-up" software uses an algorithm to make intelligent guesses about what colour and tonal values those made-up pixels should have. This can take a 1.2-megapixel image up to two or four or eight megapixels – or more. What's the catch? Even though your image now has more pixels, what the interpolation software can't do is create additional detail that wasn't there to begin with. Those crime investigator TV shows where the lab guys take a few pixels from the photo of a fleeing car three blocks away and magically reveal a license number in ultra high-resolution is pure fiction.

Nevertheless, blow-ups done through interpolation work because you normally don't look at a poster from a few inches, and at a normal viewing distance of a couple of metres, the result can be pleasing. Interpolation smoothes out jaggedness or pixilation, and works better on some types of subjects than others. There are several different interpolation algorithms, each offering advantages for certain types of content. Genuine Fractals, one of the early "res-up" programs, uses fractal math, and claims that because fractals appear within natural structures, its fractal-based interpolation works well for enlarging scenes containing natural elements – a landscape scene, for example.

I was recently asked by a publisher to work on an image of Hurricane Rita from space, which it wanted to publish in a book. The original "hi-res" image obtained from the US National Oceanic and Atmospheric Administration was just 1.3 megapixels, good for a 3x4 inch image in a book. However the

publisher wanted to use it as a double-page spread 17 inches across, and so needed the image to be around 23 megapixels.

Coincidentally I was working with a program called PhotoZoom Pro 2.0, from a developer named BenVista ([www.benvista.com](http://www.benvista.com)). It uses an interpolation technology called S-Spline XL. I ran the image through PhotoZoom and the results were impressive. Of course, clouds from space tend to look soft anyways, so there's not a lot of crisp detail to degrade. However the NOAA had superimposed text labels and information panels over the photo, and even these remained readable after the 17x enlargement. Often in interpolation, geometric forms like letters become misshapen in odd ways, but with PhotoZoom, although they got fuzzier, they kept their recognizable shape.

By David Tanaka



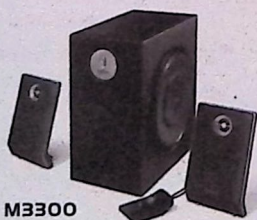
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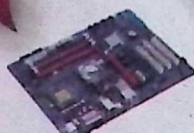
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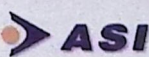
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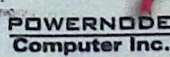
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# Just shoot me

## A camcorder's buyer guide in plain English

With the holidays rapidly approaching, it's a perfect time to invest in a camcorder to capture those get-togethers with family and friends.

A digital camera can do the trick to immortalize precious moments, but why settle for a still image when you can shoot video and record audio, whether it's young children ripping open presents, a toast at the dinner table given by grandma and grandpa or a baby's first steps followed by a roar of applause.

It's even worth capturing those incriminating scenes, such as a lampshade-wearing uncle who enjoyed the eggnog a little too much (there's one in every family, no?).

Today's camcorders – which have gone digital, just like your camera – are ultra-compact and can record in stunning video clarity. And thanks to computers, it's a cinch to edit your movie, burn a DVD or post the digital video (DV) footage to a Web site.

If you're in the market for a new camcorder, the following are a few features to "shoot" for:

### Recording media

One of your first decisions will be how you want the footage to be saved in the camera.

Currently, the most popular digital format is still a digital tape, namely, MiniDV. Resembling tiny cassettes, these tapes can store roughly 60 to 90 minutes of video (or 120 minutes on long play) and can be found easily when traveling at hotel gift shops and convenience stores. They're also relatively inexpensive to buy. You may also see camcorders that shoot on HDV, which stands for high-definition video, referring to the ability to record widescreen high-definition video (1280 x 720 pixels) onto a MiniDV tape (more on high-def in a moment).

The second most popular format is recordable mini DVDs. Some users enjoy the ability to pop the disc out of the camcorder and into a DVD player to watch the footage right away (or into a PC to begin editing). But the downsides to this technology is that they're still relatively expensive, they're harder to find when traveling and they typically don't store as much information as MiniDV tapes.

Newer camcorders may have a built-in miniature hard-drive to store up to 36 hours of video (on a 30GB drive). Because the hard drive isn't removable, you must connect it to a PC to copy over the video before editing.

Another trend is camcorders that shoot to postage stamp-sized Flash memory cards, but this recording format isn't too popular yet.

Keep in mind the recording format won't make too much of a difference in the quality of the video and audio – it's more of a personal preference.



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#### Resolution and aspect ratio

DV camcorders record footage through a "CCD" (Charged Couple Device), which is made up of a number of little dots known as "pixels" – not unlike your digital still camera. The rule of thumb is the higher the number of pixels, the better the video image will be.

One decision you need to make is whether you want to shoot video for a high-definition television (HDTV), which means more pixels make up the image, or a standard-definition television (SDTV). A related choice is whether you want to record in a boxy 4:3 aspect ratio (for older TVs) or in 16:9 widescreen aspect ratio.

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A SD camcorder usually records at a resolution of 720 x 480 pixels, which looks about as good as a DVD on a standard television. A HD camcorder may shoot at 1280 x 720 or 1920 x 1080 pixels, filling up an entire widescreen with beautifully detailed images.

Rule of thumb: if you own an HDTV or plan to buy one in the near future, go with a high-definition camcorder, which usually starts at about \$799. Be aware, though, if you want HD footage on a standard TV you will see bars at the top and bottom of the picture. On the flipside, watching SD footage on widescreen television may look odd as it may stretch to fit the image on the screen.

#### Zoom & more

Most camcorders will have auto-focus (important for novices) and both optical and digital zoom. Remember, optical zoom is the "true" zoom as the lens will physically get closer to the object, while digital zoom merely attempts to simulate a zoom by adding more pixels to the image. The higher the optical zoom, the better. Usually, camcorders offer between 10x and 32x optical zoom, which is more than enough for most users. Another important feature to look for is "image stabilization" to prevent the image looking shaky when you're zooming in on a subject from a far.

#### Other points to consider

Many consumer camcorders employ one CCD sensor to capture the three colour channels (red, blue and green), while others offer a 3-CCD system, or three separate charge-coupled devices, each one taking a separate

measurement of red, green, and blue information. While there are other factors to consider (quality and size of the sensor, for example), a 3-CCD camcorder should yield a better picture than a 1-CCD camcorder.

If taking still photos with your camcorder is important to you, be sure to look for at least a 3-megapixel still camera feature (5-megapixels or more is better), plus, make sure the camcorder has a built-in flash. Most camcorders write the still photos to a memory card, which you can then pop up and insert into a port on your PC, printer or external memory card reader.

PC editing software should ship with all digital camcorders – or you could always use the free Windows Movie Maker program built-in Windows XP – but how that video footage gets onto a PC will vary from camera to camera.

Some use "FireWire" cables (a.k.a. IEEE 1394), while others use USB. Transfer cables will often come bundled with the camcorder. Try to look for a fast connection type (FireWire or USB 2.0 is preferred) so it'll transfer the footage onto the computer quicker – roughly 40 times quicker than regular USB 1.1. (Practically speaking, USB 1.1 is really too slow for video transfer.) Your PC will need the appropriate USB or FireWire ports – Newer PCs use USB 2.0 ports, and a few PC makers include Firewire on specific models.

With Macs you get iMovie as part of the included iLife software bundle, and Macs also come with both USB 2.0 and Firewire ports.

Audio will be handled via an integrated microphone, which should do the trick for most (some even record in 5.1 surround sound!), but more advanced users might consider a camcorder with the option to add an external microphone.

By Marc Saltzman

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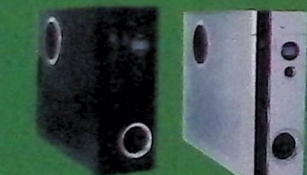
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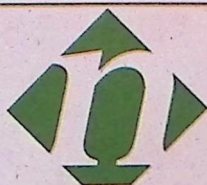
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# New SLRs for the mid-range

## That's a lotta camera for a thousand bucks

If you are a photo enthusiast about to make the plunge into digital, or are thinking of upgrading your point-and-shooter, \$1,000 (give or take a few hundred) will put some serious technology into your hands. This is the price zone that attracts pros and advanced amateurs alike. A thousand bucks is no insignificant chunk of money, but a couple of years ago, cameras in this category cost double that and had lesser feature sets. And a couple of years before that, one large might have got you a premium point-and-shoot.

Technology has definitely moved the mid-range digital SLR up a notch. Most now have sensors of around 10 megapixels. Photographers will find high ISO shooting a more practical choice because camera makers have made good progress in taming the digital noise that plagued high-ISO settings in the past. This means images taken in low-light situations will be cleaner, resulting in fewer of those random, miscoloured pixels polluting your images.

An inherent problem with SLRs is that when you change a lens, you are opening the body cavity to all sorts of foreign matter like dust. With film cameras, because each frame uses a fresh part of the film roll, a speck of dust might affect just one frame. Since the sensor on a digital SLR is permanently fixed, a single dust spot will affect every photo you snap until you physically remove the dust by cleaning the sensor – a somewhat delicate procedure.

Olympus pioneered a solution to the sensor dust problem with a high-frequency vibration solution called the Supersonic Wave filter. Now other camera makers including Canon, Pentax and Sony have implemented sensor dust mitigation solutions of their own. This is a welcome advancement for anyone that freaks out at the thought of poking around inside the camera (and the concern is well placed because you can do some serious damage in there if you are not careful).

Another truly useful feature that is becoming more common in this class of camera is mechanical image stabilization. This is accomplished either by a floating sensor assembly within the camera, or floating lens elements within a lens. Some manufacturers have implemented both. Image stabilization smooths out minor vibrations and tremors that would normally cause blurriness in a photo. It means overall better hand-held shots. Pentax and Sony have both implemented sensor-shifting image stabilization, others manufacturers like Canon and Nikon have IS lenses, and notably, Canon has had relatively affordable IS lenses for a few years.

Some point and shoot cameras implement what's often called "digital image stabilization" This is a technique that boosts ISO so that the correct exposure can be made at a higher shutter speed – which reduces the amount of blurring caused by camera movement. When really clean high-ISO becomes a reality, this solution will be one of the unique contributions of digital to photography, but for now, mileage will vary.

Standardized RGB, or sRGB is a universal colour space, recognized by most devices like monitors, commercial print labs, TV sets, etc. With photo inkjet printers now very affordable, you can make stunning prints in your home. The range of colours that wide-gamut photo inkjet printers can produce surpasses what gets defined in sRGB, so camera's that capture wide-gamut colour have benefits that aren't merely theoretical – they are something you can observe with your own eyes in a high-end inkjet print. A popular wide-



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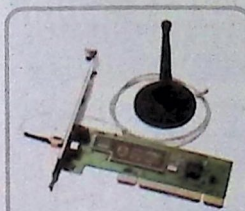
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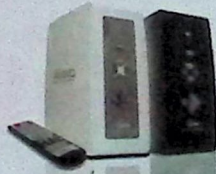
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gamut colour space is AdobeRGB, and a number of cameras now support this in jpeg files. [All Raw files can be tagged with an AdobeRGB space as well].

And speaking of Raw, this digital tower of Babel just keeps getting taller, with every manufacturer pushing new versions of their own proprietary formats. A big star goes to Pentax for at least paying lip service to standardization by optionally supporting Adobe DNG (digital negative), a royalty-free raw format that Adobe offered to the industry as a kind of universal raw file format.

Brand loyalists will be happy to find competitive digital models from their favourite camera makers. Even fans of Konica-Minolta, which exited the digital camera business last year, will find a home for their Minolta A-mount lenses. Sony took over the SLR development that K-M had begun, and so the A100 Alpha uses A-mount lenses. Samsung formed an alliance with Pentax, so Samsung's SLRs use Pentax lenses. Olympus, Panasonic and Leica are working together so each company's cameras have some common technologies, including the Four-Thirds architecture and lens mount system. The Leica Digilux 3, Panasonic DMC-L1 and Olympus E-330 share a close family resemblance, although Leica and Panasonic have priced their models quite a bit upmarket (both include a very fine Leica zoom lens).

Here's what a grand will get you from the various manufacturers:

#### Canon EOS-400D Digital Rebel XT

Body Only: \$930

Image size: 10.1 megapixel, 3888 x 2592 pixel Weight: 18 oz. (510 g)

The latest version of Canon's Rebel series is called the XT (you may still be able to find the XT, with an eight-megapixel sensor). The latest Rebel looks more like serious gear in contrast to the plasticky aesthetics of earlier models. And it has a fine set of performance specs too, including Canon's DIGIC II image processor (same as on the 30D and 5D). Like other Canon SLRs, it uses a CMOS sensor (most other camera makers use CCDs). It now keeps the sensor clean with ultrasonic vibration but also uses software speck removal. And for big colour, it supports the AdobeRGB colour space.

#### Nikon D80

Body only: \$1169

Image size: 10.2 megapixel 3872 x 2592 Weight: 21 oz. (585 g)

When I picked up the D80, what first struck me is how small it is compared to the D70 or D200. Fans of Nikon's compact FM film SLR family of yore may be able to relive that experience digitally with the D80. Some reviewers have compared the D80 favourably to the D200 — compromises include slower image processing and a less rugged body.





If you are thinking adding to or upgrading from another SLR or and have accumulated a lot of CompactFlash memory cards, be aware that the D80 uses only SD cards.

#### Pentax K10D

Body only: \$1100

Image size: 10.2 megapixels 3872 x 2592 Weight: 25 oz. (710 g)

Long anticipated by Pentax fans, the K10D has built in dust removal by what the company describes as a "fluorine coating on low pass filter." It pairs this with a sensor vibration system. That ability to shift the sensor rapidly also figures in the camera's built-in mechanical image stabilization system. It also uses SD cards and supports Adobe DNG raw format or Pentax raw format. The K10D has also been somewhat ruggedized with weatherproof/dustproof seals.



#### Sony A100 Alpha

Body only: \$1099

Image size: 10.2 megapixel 3880 x 2600 Weight: 19 oz. (545 g)

Although Sony has been in the digital still camera (not to mention camcorder) business for years, the A100 is its first interchangeable lens SLR model. The A100 Alpha has uses a sensor dust removal Sony has named "charge protection coating" plus a CCD vibration system. The movable sensor array also allows the A100 to incorporate mechanical image stabilization through sensor shifting. Sony took over development of the Alpha from Konica-Minolta. This may be good news for Minolta fans as the Alpha uses Minolta A-mount lenses. Like a few other cameras in the category, the Alpha supports the Adobe RGB colour space. Uses

#### Olympus E-330 and E500

Body only: \$699 (E500); \$899 (E330)

Image size: 8 megapixel 3648 x 2736 (E500) or 7.5 megapixel (E330)  
Weight: E-500: 15.3 oz. (435 g); E330: 19 oz. (540 g)

At 7.5 and eight megapixels, Olympus's pair might seem a little underpowered by others in this class, but the difference between eight and 10 megapixels is a relatively small step, plus these cameras are priced lower than the others in this roundup, closer to what competitors sell the six-megapixel entry level models for.

Until recently Olympus was the lone camera maker supporting the Four-Thirds dSLR architecture, a ground-up SLR design specifically for digital sensors. Now Panasonic and Leica are wearing the Four-Thirds badge on their SLRs too. Olympus pioneered features like the Supersonic Wave Filter to keep dust of the sensor

By David Tanaka

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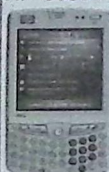
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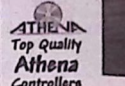
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# Living with Linux

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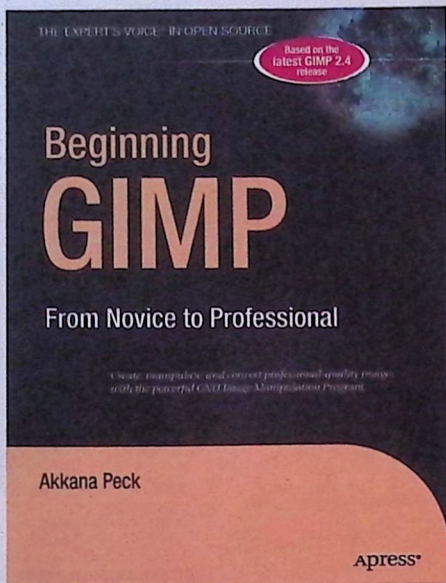
It's the time of year for gift giving, but what can you get for the Linux user in your life when nearly everything associated with Linux is free? It's a poser, all right, but not hopeless. You just need to be creative.

## Books

Although there's a plethora of online documentation available for all facets of Linux, a good book still has charm and utility. Here are two recommendations:

**The Official Ubuntu Book**, by Benjamin Mako Hill and others, Prentice Hall, ISBN 0132435942, \$43.99. Whether you're a seasoned Linux user or a Ubuntu Linux newbie, this very pleasant guide to using Ubuntu is an ideal companion for anyone following this series. It includes tips for fine-tuning your Ubuntu system, such as setting up printers and making adjustments to your desktop.

The Official Ubuntu Book is not an in-depth, complex technical guide; it's a breezy introduction – easy to read and understand – and it highlights many of the free software products that may be of interest. Best of all, it comes with a Ubuntu Linux CD that can be used to try out Ubuntu directly from CD, or to install Ubuntu on your computer of choice.



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# DV, or Not DV

## HD on SD: Sanyo Xacti VPC-HD1a

www.sanyo.ca \$900

Effective pixel count: Approx. 5.1 megapixels

CCD: 1/2.5 inch, 5.36 megapixel CCD (total)

Recording media: SD memory card

Still pictures: JPEG, DCF1, DPOF2, Exif Ver 2.23

Video clips: ISO standard MPEG-4

Audio: AAC (48kHz, 16 bit, 2ch.)

Max. still resolution: 3680 x 2760 (10 megapixel interpolated),  
2592 x 1944 (5 mpxl)

Video resolution: High Definition 1280 x 720 (30fps, 9Mbps  
or 6Mbps);

Standard Definition: 640 x 480 (60fps/6Mbps or 3Mbps);  
Web (320 x 240 15fps)

Lens: 10x optical zoom

Dimensions: 3.1 x 1.4 x 4.7 inches

Weight: approx. 8.3 oz  
(including battery and a standard SD card)

High-definition digital camcorders are moving quickly from the professional to the high-end prosumer, and now the mainstream consumer marketplace.

The tag "lifestyle product" describes new devices for folks who want the best video quality and the most operational features available all in as simple, lightweight and inexpensive a package as possible.

One of the reasons new camcorders fit this category is that they've traded the videotape for a memory device, saving a lot of expense and expense.

### HD-on-SD emerges

Panasonic will launch a high-definition camcorder this year that uses an SD memory card for storage, and an HD-on-SD prototype has been shown overseas. Meanwhile, Sanyo has already delivered, and I was grateful to get the company's Xacti VPC-HD1a camcorder into my hands.

It's an incredibly compact and lightweight camcorder, its body shape is a fairly natural handgrip by itself, and many of its

controls are comfortably placed right where a thumb can easily reach. The Xacti easily slips in and out of a shirt pocket – or in and out of its small docking unit used for hooking up to a PC or TV.

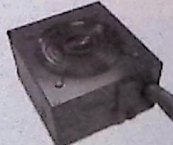
For something so small, the gadget is packed with features, not the least of which is the ability to record high-definition video (specifically, it records 720 progressive horizontal lines, a recognized HD specification – less than 1080, but much better than standard 480-or-less line video).



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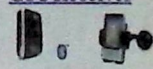
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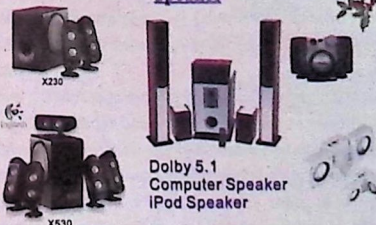


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In addition, the Xacti is a SMB digital still camera, audio recorder, and multi-media playback device.

So, from the lifestyle point of view, the HD1a has it all: ease of use [it fires up quickly, and can be used with the touch of a single button]; bells and whistles galore [there's a 240+ page manual to explain it all]; and an unmistakable visual coolness factor.

The Xacti records to SD memory card as opposed to tape, disc or hard drive. That fact alone causes some people to cringe in fear. For several reasons, early non-tape-based camcorders just did not have the clarity, crispness or resolution that users expected. As SD card capacities increase and as digital video compression algorithms improve, that's less of an issue. On a 2GB SD card, you can capture 42 minutes of the highest definition video [more than a thousand 5MB digital stills] with the Xacti; there are new 8 MB card sizes available, too, so recording time will not be an issue.

### But what about image quality?

Many camcorders are built to deliver strong, saturated colours that consumers seem to prefer, and on occasion, Sanyo is cited as one company that goes too far in this respect. The Xacti's rich, deep colours may appeal to some [I have some great shots from a vibrant flower garden], while others may see the richness as a trade-off with low-light sensitivity [without any extra lighting, shots taken in my home/office were a little dull and slightly grainy].

As with many digital camcorders, the more light that's available, the better – especially indoors, and especially with the higher-resolution video settings. On a brilliant, sunny day, the camera's imagery is dynamic, detailed and definitely very good.

For example, with standard video, shots of a city skyline can buzz with aliasing, herringbone and jaggy-type artifacts, as the camera struggles to resolve the complex detail and sharp edges of multiple buildings. The Xacti's HD setting captured it all in a remarkably clear detailed widescreen shot, without visible artifacts.

The camera does have a "stead-shot" mode, thanks to its built-in digital image stabilization settings, but when pushed, it can look like a weird strobe setting. Again, more demanding users will prefer a tripod or external camera support of some kind, as opposed to the occasional artifact that the stabilizer adds to shaky video scenes. [By the way, the docking unit makes a handy little flat-surface tripod, uh, unipod.]

One of the camera's highly-touted features is the ability to capture a digital still photograph while recording video. But I found that when the camera takes the digital photo, there's a slight pause in the video as the still image data is dumped to the memory card.

### Controls and menus

Most of the camera's functions and settings are

accessed via an on-screen menu system, but the navigation device itself needs some work. A tiny little joystick protrudes slightly from the control area on the back; its delicate feel is unnerving, and it has an annoying tendency to slip or jump across menus when pushed [it functions as the "Enter" button, as well].

It is nice that two main commands, On/Off and SD/HD recording, have separate buttons, hidden under the flip-out LCD so they cannot easily be accidentally bumped.

One thing that's not so nice is a built-in "talking" navigation guide that designed to help first-time users [and seemingly to bother anyone who uses it more than once].

The HD1A offers several recording modes, suitable for HDTV, DVD or Web-based video. At the top top-end, there's the 16 x 9 widescreen HD-SHO format [1,280 x 720, 30 frames per second, 9 Mbps bit rate]. Several selectable steps down from there is the quarter-screen size [320 x 240, 15 fps, less than 1 Mbps] for Web streaming and delivery. The latter setting is also an iPod-compatible one – and the HD1a has added a direct-to-iPod transfer feature.

Settings like video quality are accessed via the joystick and menu, which gets divided into two main screens: Shooting Settings and Options.

The Shooting screen is itself split into two pages: Basic Settings and Advanced Settings.

Basic Settings is where you can select video and still image quality, pre-set Scene modes and Manual exposure settings, including an aperture priority, shutter speed priority, and full manual mode.

Advanced Settings covers image stabilization, focus controls, exposure settings, and auto functions. Here and elsewhere, the joystick can take on extra functions: it actually was handy to be able to toggle through the focus range and control depth of field with the joystick and the manual focus settings.

What was a little confusing was the relationship between certain image settings and camera functions. With the image stabilization on, for example, the framing and composition of a picture is not exactly what appears on the LCD. Likewise, some filters and image corrections features are not previewed.

Fully automatic shooting is good and the camera reacts well; one short-coming might be the sluggish auto-focus – if Sanyo could fit a little focus assist lamp somewhere, that would be better. Other features includes multiple flash settings, noise reduction, self-timer, digital zoom and macro settings, as well as several selections for still image printing, or movie sequence exporting.

### Working and Editing with SD Video

As mentioned, one of the touted advantages of storing video on memory devices like SD cards is that the clips are immediately available to a PC-based editor or video



manipulation program. Unlike video on tape, there is no need for importing or digitization or encoding the source material.

That's the ideal, of course, but as always, there are some surprises in the reality.

The Xacti records its video in MPEG-4, a scalable compression format that's based on Apple QuickTime. As with other compression schemes, there are different flavours within the specification. MPEG-4, Part 10 is also known as H.264, and can be found in Blu-ray and HD-DVD (for disc-based playback of high resolution material), DVB (for satellite transmission), 3GPP (for mobile applications) and other digital media technologies.

As a scalable compression scheme, it handles low data rate streams (50 or 60 Kbps for mobile video streaming) right up to full high definition video, in streams of seven or eight Mbps.

So finding an editing software package (and PC) that's immediately and consistently compatible with such encoded video can be a challenge.

[The HD1a does support in-camera editing and sequencing of saved video clips, through a basic process of extracting unwanted video or joining favourite clips together. An Edit Video screen, in the playback menu, offers simple Cut, Join, and Edit commands, which are applied to paused video in camera.]

When first importing clips into iMovie, I found the .mp4 clips were being turned into .dv files, which are much bigger. The same clips imported into Final Cut Pro wanted to be rendered with both audio and video before finalizing the edit.

But inside iMovie is a project setting menu, with commands to import files to the Apple Intermediate Codec (AIC) and a 1280 x 720p setting, which works better – FCP can be told to recognize AIC, and edit in real-time with it.

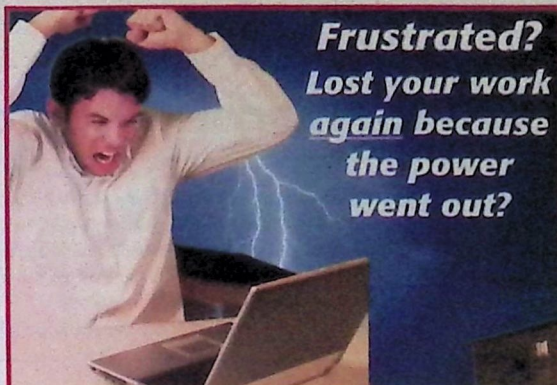
New plug-ins for the HD1a will allow capture and edit in native formats, and to author and burn either HD DVD or standard definition DVDs. Ulead, for example, is including such a plug-in with DVD MovieFactory 5, its latest consumer DVD authoring and burning package.

#### In Conclusion

The Sanyo Xacti VPC-HD1a represents one of the first digital camcorders to bring true high definition to the "lifestyle" or "consumer" camcorder marketplace. In the right situations, its imagery is remarkable for its clarity, colour and resolution. There are some enhancements that can be added to the inevitable next version, but at less than \$1000, it's a strong example of where technology is heading, and what it can do along the way.

By Lee Rickwood

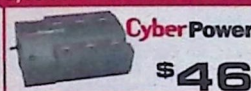
Lee Rickwood is a freelance writer and independent video producer. He operates Word On A Wire, an independent company providing editorial, media production and consulting services to individuals and companies across North America. He can be reached at [videodaze@goodmedia.com](mailto:videodaze@goodmedia.com)



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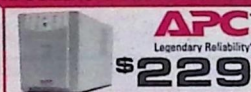
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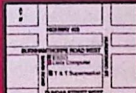
With DVDs that's pretty much the case – all that's needed is player

software, a DVD drive and Bob's your uncle. DVD player software for the PC is cheap, plentiful and usually supplied with the DVD drive anyway. If you're missing the software then check out PowerDVD or WinDVD on the web or at your local computer store.

Unfortunately, tech life never remains simple. Apparently, the movie industry is none too pleased at how easy it was to undermine their CSS

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[Content Scrambling System] protection scheme for DVDs and has decided to punish its customers with an extended dance remix version of the same thing. This time it's called AACPS and it's coupled with HDCP. AACPS or Advanced Access Content System is pretty much the same deal as CSS, but HDCP is a whole new beast altogether. AACPS only needs to be supported by the drive and the player software, just like CSS.

But HDCP or High Definition Content Protection needs to be supported by your video card and monitor. It ensures that all devices along the signal path are kosher and are not recording devices. It can downgrade an HD signal to a regular one or not play altogether if it finds a device not to its

liking or unsupported. When I say, "not to its liking," I mean there's a revocation list embedded into HD content that checks for particular devices that are considered compromised. A digital Senator McCarthy, if you will.

HDCP is only supported by DVI and HDMI connections, so those are the only types that can guarantee full HD video capability into the future. In fact, Windows Vista implements HDCP and without it, you may lose some functionality. So, make sure your video card and monitor both support HDCP or you may miss out if you plan to watch any HD content.

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from any source – recorded or broadcast. PowerDVD for HD, which at this time is only available in a drive bundle, requires an Extreme Edition Pentium at minimum, and even the lower end dual core Pentium Ds are too slow. The good news is that new drivers are coming out from the major video card manufacturers that should off-load some of that processing to the video card. This should help make these specs a little more reasonable.

By the way, HD-DVD and Blu-ray can use more than one codec. Where DVD only uses MPEG2, the HD formats can use the more advanced H.264 and VC-1 codecs as well. Make sure your software player supports all of these as well as your drive.

As for the drives themselves, they seem to be trickling out with Pioneer, Plextor and Sony Blu-ray recorders going for \$950 and up and HD-DVD ROMs only available as part of a laptop or desktop system. However, one exciting development is the Xbox 360 has a very reasonably priced external HD-DVD drive connected via USB. Keep an eye out to see if any player software supports it on the PC in future.

In summary, you need a drive that supports AACs, player software that supports AACs as well as the H.264, MPEG2 HD and VC-1 codecs and a display and video card that both support HDCP. It doesn't really seem like anybody is completely ready for prime time.

The other option is to get an ATSC tuner card for just over a hundred bucks and watch Hockey Night in Canada in HD for free over the air. Of course, you need to live in an area where a network is transmitting in HD but that seems to be actually happening. You still need to have HDCP devices due to the broadcast flag though, yet another content protection scheme.

By Andrew Carruthers

#### HDCP capable video cards:

EVGA E-GEFORCE 7900 GS KO - \$270  
EVGA E-GEFORCE 7900 GTX - \$530  
XFX GeForce 7950 GT - \$360  
ATI Radeon X1950 XTX - \$560  
Sapphire RADEON X1600 PRO HDMI - \$190

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Acer AL2616WD 26" Widescreen LCD - \$910  
NEC Multisync 20WNGX2 20" Widescreen LCD w/tuner - \$735  
Samsung SyncMaster 940BW 19" Widescreen LCD - \$265

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#### Internal HD DVD Disc recorders/players

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Various Toshiba & HP laptops and systems

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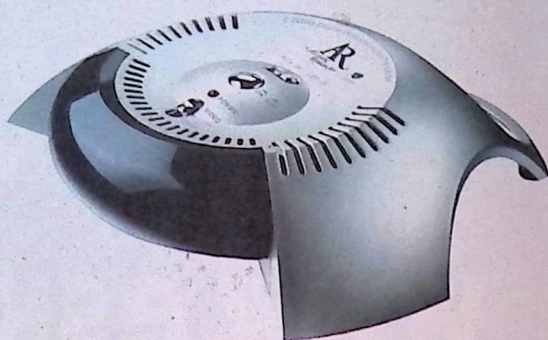


# Music everywhere in your home

## HUB looks at AR's wireless solution

If you want music from a single source like a media centre PC or MP3 player (or a stereo system for you traditionalists) to play throughout your home, you can either start punching holes in the drywall to run the wiring, or think wireless. I had the opportunity to look at a wireless solution from Acoustic Research.

The key component is the Digital Wireless Transmission Hub (\$49.99), which plugs into your computer's headphone jack (or any audio-out source) and broadcasts the signal over the 2.4 GHz frequency band. It's a dome-shaped device about one and a half times the diameter of a CD. AR claims a working range of 45 metres (150 ft). What you need to pick up



those signals are speakers with wireless receivers, and AR sells a few different models as well as headphones as part of this wireless family.

One unit is an indoor/outdoor speaker (\$179.99). The weatherproof enclosure is cylindrical with a handle on top. It looks oddly like an insulated jug for drinks, but sounds good – not audiophile quality, but good enough to accompany an evening of patio chatter. The two-way design uses a five-inch woofer and two-inch tweeter, and the unit has its own amplifier. It comes with an AC adapter but can be powered by eight C cell batteries for a truly wireless experience. A switch allows you to set the speaker to pick up left, right or both channels. In battery mode, the unit powers down when it hasn't detected a signal for a period. This means you can use a single speaker for both channels or a pair, with each unit set to a different channel for stereo reception.

The flat panel model (\$149.99) isn't an electrostatic design as the name might imply, but uses traditional cones (two of them). The "flat panel" description refers to the fact that speakers are housed in a relatively shallow enclosure. The enclosure front is nicely curved so you can mount it on a wall and the low profile design is quite unobtrusive. Audio quality is good for background listening, movies etc. but audiophiles will find the quality somewhat lacking.

Like the indoor/outdoor model, the flat panel comes with an AC adapter but can be driven by C cell batteries (10 are needed for this unit) with auto power-down. It also has the left-right-both switch so you can use it singly or in pairs for stereo reception.

The headphones (\$149.99) are somewhat bulky with full ear cups, but



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reasonably light and quite comfortable. And they sound great. The unit is powered by three AAA cells, and comes with a cable that connects the headset to the hub for charging the included NiMH batteries.

I live in a single level rancher, and with the wireless hub attached to my notebook computer in the TV room, the speakers and headphone worked pretty much everywhere, including outside on the patio and in the front and back yards. The only location where reception was a problem was in the office. This area was once an attached garage but converted to living space by a previous owner. I suspect the degradation was caused by the cinder block firewall that separates this room from the rest of the house.

One of the potential uses that AR suggests is as the rear speakers for a 5.1 surround setup. Given the dangly wire shuffle you normally have to dance through to set up the rear speakers, this might well be the killer app for wireless speaker sets.

The overall experience has been quite pleasant. It reminds me of being in a conference centre or hotel where the music is piped in and speakers are everywhere, so wherever you walk the same music continuously surrounds you. But rather than elevator music, it's stuff of your own choosing. That's sweet.

By David Tanaka

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# Supercharge your gaming

The coming year, 2007, will be a very interesting one for PC gaming. Microsoft's next-generation operating system, Windows Vista, is almost upon us, and with its imminent arrival comes a lot of hype, a lot of promise, and the expected flurry of faster and/or better hardware. Let's take a look at some of the best things you can do for your computer gaming experience in these times of change.

## Displays

If you've been avoiding slimline LCD display technology in favour of that bulky, power-hungry CRT beast you've had since 2000, it is time to make the switch. No longer are LCDs ridiculously expensive, their response times (the time between screen refreshes) are now fast enough for the most sophisticated 3D animations. Whereas in 2003 a monitor with a sluggish 30 millisecond response time would run upwards of \$500, today scorching 5ms models can be found for half that.

You need only follow a few simple guidelines when choosing a gaming-friendly LCD. Most importantly, look for a display with an 8ms or less response time – anything in that range is fast enough for even hardcore gamers. You'll also want to check the native resolution. Unlike CRTs, LCDs have a fixed resolution (such as 1280x1024 or 1600x1200) that cannot be altered. Thusly, if you try to play a game that doesn't support the native resolution of your monitor, the image will be stretched slightly or banded at the top and bottom or at the sides. Fortunately, publishers have finally woken up to the growing popularity of LCDs and are now offering more resolutions – including several widescreen flavours.

Smart gamers will also select a display that has a digital (DVI) input – thus eliminating digital-to-analog conversion altogether. There are other factors too – such as contrast ratio, brightness, and on-board USB ports – though today only the bottom-of-the-barrel manufacturers will fail in these areas.

Solid, gaming-ready non-widescreen [4:3] displays include the 2ms, 19-inch Viewsonic VX922 (\$350); the 4ms, 19-inch Samsung 960BF (\$300); and the 8ms, 19-inch Dell UltraSharp 1907FP (\$329 or less at dell.ca). If widescreen gaming strikes your fancy – and it should – check out the 8ms, 20.1-inch Viewsonic VX2025WM (\$350); the 4ms, 19-inch Samsung 941BW (\$250); and the stunning 5ms, 20.1-inch LG L204WT (\$350). And if you're happy with a 17-inch display, consider the 4ms NEC 706X2, an under-promoted model that looks wonderful. No matter which display you choose, remember that statistics such as response times aren't all they're cracked up to be. Audition as many as you can.



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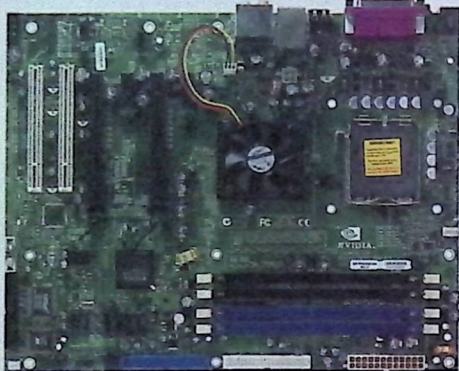
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### The video card

If your current video card is more than two years old, you're likely missing out on many of the effects and the high-end photorealistic detail of today's latest PC games. But is this a good time to upgrade? Not if you believe in the promise of the next version of Microsoft's DirectX.

DirectX is a standardized method through which software, peripherals, and hardware can communicate. The next version of DirectX, dubbed D3D 10, will ship with Windows Vista in early 2007. D3D 10 has been rebuilt from the ground up and promises a future filled with substantially better graphics. The catch? You'll need a D3D 10-capable video card in order to take advantage of all the visual perks of D3D 10-enabled games. And as of this



writing, no such card exists. Therefore, futuristic gamers may want to hold off a few months or more.

That said, it will undoubtedly be some time before all the Vista and D3D 10 kinks are worked out and before games stop supporting the current DirectX version, DirectX 9. So, if you see yourself sticking with DirectX 9 for the foreseeable future, perhaps now, while the price of non-D3D 10 cards is dropping, is the time to upgrade.

Video card shopping is no longer "the card with the most memory wins." Today, you need to examine model numbers. Generally, cards with higher model numbers are more capable of supporting advanced effects, larger resolutions, and faster frame rates. Furthermore, modifiers such as "XT," and "GTO" typically indicate even more power. An excellent online video card resource that compares card performance can be found at [www.tomshardware.com](http://www.tomshardware.com). Click "Graphics & Displays", then click on "VGA Charts."

One thing is almost certain – industry giants NVIDIA and ATI continue to duke it out, and still there is no clear champ. Suffice to say that a sub-\$200 card is entry-level, a \$200-\$400 card will do most everything but the most advanced effects and the highest resolutions, and a \$400-plus card is world class.

At the very top of the price spectrum are SLI and Crossfire setups. The latter hails from ATI and the former from NVIDIA, but both technologies are similar in that they involve not one but two video cards. The upside to a dual-card setup (and future four-card setups) is sheer power. However, that power doesn't really begin to show itself unless you play at 1600x1200 or higher resolutions. Moreover, you'll need a motherboard and video cards that support dual-card setups. The ideal solution for many may be to buy one SLI-

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Each of these mice will run you \$70 or more. If you're on a budget, check out the Logitech MX610 Cordless Laser Mouse (\$50), available in both right- and left-handed flavours, or the Microsoft Wireless Optical Mouse 5000 (\$50). Neither is as tricked out as the gaming mice above, but each delivers accurate tracking and wireless operation.



#### Joysticks

There was a time when several high-grade PC joysticks were released every year. But now, with specialized peripherals eating into the joystick market, some of the finest all-purpose sticks are already a few years old. One of the best continues to be the Saitek Cyborg Evo (\$50), a feature-laden device that adapts to lefties and righties as well as it does to those with large or small hands. The Logitech Freedom Cordless 2.4 Joystick (\$60) looks similar to the Cyborg but offers wireless operation. It is not, however, the ideal stick for left-handed gamers. Our final "standard" joystick of note hails from CH Products. The CH Fighterstick USB (\$70) has been around for years, and for good reason — it delivers all the controls a good pilot needs and great build quality to boot.

The best of the current batch of flight control systems is arguably the Saitek X52 (\$150), a sophisticated, multifaceted unit with a control-laden arcing throttle for the left hand, an equally busy joystick for the right, and full programmability. It's a big device though, so get ready to open up some

desk space. Hardcore pilots with fat wallets will also love the Thrustmaster HOTAS Cougar (\$250), a replica of the real life F-16 controller that features all-metal casing and enough programmability to satisfy the most fastidious jet jock.

#### Driving gear

If you're a diehard driver, you'll like the Logitech MOMO Racing Force Feedback Wheel (\$100). It looks good, it feels great, and it's accurate. The unit features six programmable buttons, a sturdy desktop clamping system, and credible force feedback. Users can change gears with the integrated shifter, or, better still, with the nifty rear-mounted paddles.

Step up the price point considerably and you'll find mechanical marvels like the excellent Thomas Super Wheel driving system (available online at [www.thomas-superwheel.com](http://www.thomas-superwheel.com) for \$300 and up depending on configuration). Notch it up even further and you can own Virtual Motorsports' VPP Pedalset (\$665 at [www.vmracingsystemes.com](http://www.vmracingsystemes.com)), a stunning creation that could well have been pulled from an actual racecar. You won't find any plastic here.

By Gord Goble

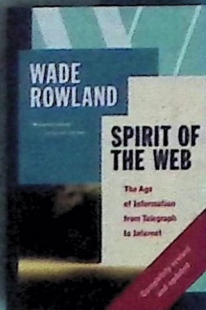


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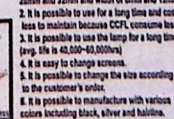


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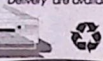
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## HUB's official guide to giving the gift of elves and explosions

The gamer in your life is probably pining for a Sony PlayStation 3 or a Nintendo Wii right about now, but there are plenty of ways to satisfy their videogame cravings this holiday without spending hundreds on a new console, starting with these ten terrific PC titles.

### Dark Messiah Might and Magic

Developer: Arkane Studios Publisher: Ubisoft

The Might and Magic franchise moved beyond left turn-based strategy territory and is breaking new ground with this incredible looking first-person fantasy/action game. The single player quest allows players plenty of room to experiment with play styles, ranging from magic to stealth. Meanwhile, the multiplayer portion of the game takes a page out of EA's Battlefield games, letting dozens of players to fight it out on sprawling battle grounds.

### Medieval 2: Total War

Developer: Creative Assembly Publisher: Sega

If the person you're buying for has any previous Total War games sitting on his or her game shelf, then your search for the perfect gift is over. Medieval 2: Total War has everything fans of the series want and expect, including

massive armies hailing from authentic historical regimes, and nothing they don't, such as tedious exercises in resource gathering. And it all looks better than ever, thanks to a shiny new graphics engine.



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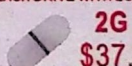
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## Microsoft Flight Simulator X

Developer: Microsoft Game Studios Publisher: Microsoft Game Studios  
Microsoft's mission to make the perfect flight simulator continues in this, the tenth installment in the longest running franchise in the PC gaming world. The aircraft – including planes, helicopters, and a couple of less

recognizable aeronautical machinations – are, as always, stunningly realistic, inside and out. And for the first time ever players have been provided (optional) goals, like saving workers from a burning oceanic oil rig.



Microsoft Flight Simulator X

## Company of Heroes

Developer: Relic Publisher: THQ

Far from your typical war strategy game, Company of Heroes boasts tremendous graphics, ground-breaking tactical game play, and outstanding presentation. It puts players in the American trenches on the Western Front of the Second World War, often focusing on the drama of smaller groups of soldiers within the larger battle. It's completely original, and it will be a great treat for any strategy game fan you happen to be buying for.

## Battlefield 2142

Developer/ Publisher: Electronic Arts

This holiday's installment in one of the most popular first-person shooter franchises in the world puts players at the helm of giant military robots and waging war on massive mother ships called Titans as they fight for control of North Africa, the only place left on

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Battlefield 2142



Earth that isn't covered by ice. Just keep in mind that if you bestow 2142 as a gift on Christmas morning you probably won't see the recipient again until the new year...

#### Tom Clancy's Splinter Cell: Double Agent

Developer: Ubisoft Publisher: Ubisoft

Gamedom's most famous spy is nearly unrecognizable in his fourth adventure as he goes undercover and infiltrates a mysterious new terrorist organization. His familiar black duds are nowhere to be seen as he escapes from a maximum security prison, and players will be forced to make hard decisions [do you kill some poor shmoe to convince the terrorists you're on their side or let him live and lose their trust?] that will have an impact on how the game eventually plays out.

#### Neverwinter Nights 2

Developer: Obsidian Publisher: Atari

If there's a nerd on your shopping list, this sequel to one of the most beloved role-playing games of all time is likely exactly what he or she is looking for. Featuring a deep character building system, a brilliantly crafted story, and of course plenty of nefarious critters to clobber, Neverwinter

Nights 2 delivers a lengthy single-player campaign as well as a complete online experience.

#### Sid Meier's Railroads!

Developer: Firaxis Publisher: 2K Games

Whether it's pirates or golf, space colonization or world history, Mr. Meier knows how to do simulation games. And now he's brought his considerable talent to bear on the world of trains, delivering an accessible, compelling, and enormously entertaining imitation of the real world process of laying track. But there's more to this simulation than just locomotives. As your railroad empire expands you'll be able to see cities start to flourish as trains provide them with the goods they need to prosper.

#### DEFCON: Everybody Dies

Developer: Introversion

Publisher: Introversion

Introversion – the videogame world's version of an experimental indie band – has released yet another ground breaking title in DEFCON: Everybody Dies. It's a simulation of a thermonuclear war (a la WarGames) that threatens civilization as we know it. The "winner" of the war is the nation that counts their civilian losses in the millions – as opposed to the hundreds of millions. Indeed, it's that rarest of things in the interactive entertainment world: a game with a conscience.

#### Warhammer 40,000: Dawn of War – Dark Crusade

Developer: Relic Publisher: THQ

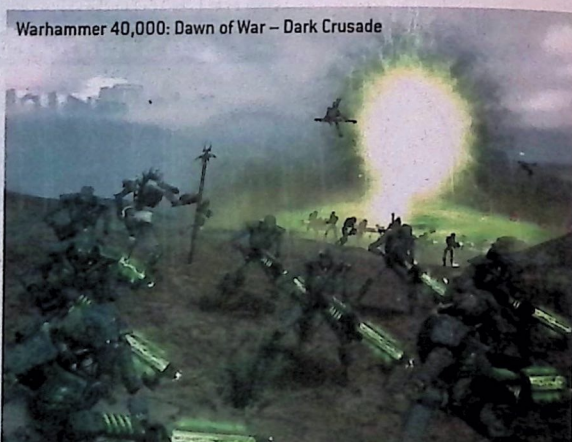
The name alone – awkward though it may be – will be enough to send chills down the spine of many sci-fi/fantasy strategy video game players. This expansion to the two-year old original is actually a standalone game (which means the person you give it to doesn't have to own the original in order to play it), and it's packed with fresh content, including new factions and a fresh campaign.

By Chad Sapieha

Sid Meier's Railroads!



Warhammer 40,000: Dawn of War – Dark Crusade









# DIY: Make your own presents using your computer

If you enjoy creating things, you'll find your computer a handy tool to support your art. It can be put to work to help create a myriad of fun and useful projects. As the holidays are a time we're all searching for the perfect and unique gift idea, it's an ideal time to see just what your computer can really do.

Much of your inspiration for holiday gifts will come from the papers and fabrics you can print on. When you're thinking of gifts, look at and beyond the world of plain white copy paper and photo paper. The most well known specialty paper is probably T-shirt transfer paper, which can be printed and then ironed onto T-shirts as well as a range of other fabric surfaces such as cushion covers, canvas bags, aprons, baby clothes and even bed linen. However, this is just a taste of the specialty papers you can find; for example, look for puzzle paper that you can print on to create instant jigsaw puzzles, and for printable fabrics ranging from organza to silk and cotton.

There are tattoo papers for creating instant tattoos and papers suitable for making bumper stickers. I love water slide decal paper such as Lazertran

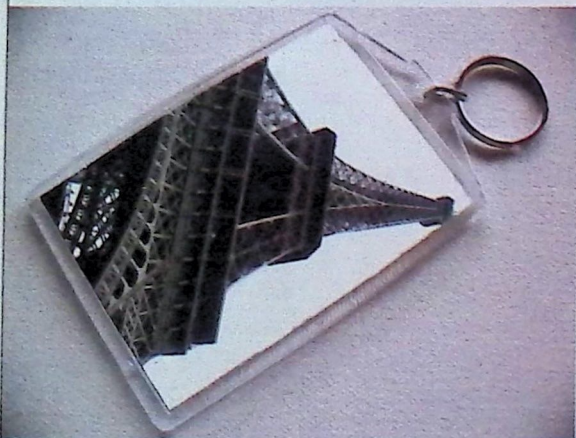


Use puzzle paper like this iron on felt puzzle pack to make personalized jigsaw puzzles for the kids.

Printed and placed in a simple store-bought frame, it will be admired and enjoyed by everyone.

If photos make great framed art, they also make neat photo frames too. Open a photo in your favourite photo-editing software and apply an artistic filter to it. Print it onto matte photo paper and then tear it into pieces to glue around a wide wooden photo frame. Use good-quality découpage glue like Modge Podge for this. You can then add other elements to it such as a swish of glitter glue or items like buttons or ribbon.

If you're handy with a sewing machine then you'll love printable fabrics. Light fabrics like silk, organza and cotton come with a backing sheet to keep them rigid when they're being printed. When the ink is dry, peel off the backing sheet and you have a printed and hand washable fabric. I like to

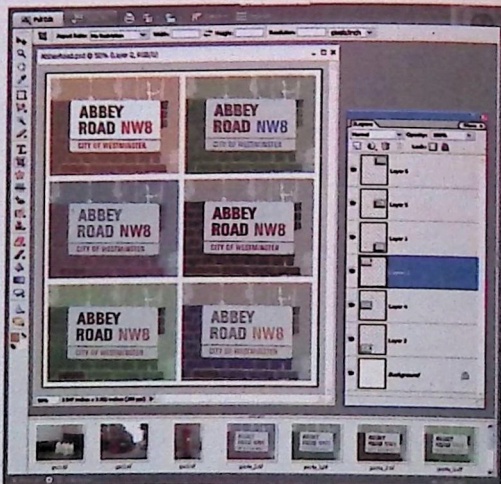


Print a favourite photo and add it to a plastic key-ring blank like this one shown here.

Water Slide Decal paper for inkjet printers. This is a two-part paper that you print on and set aside for a few minutes to dry. You then drop it into water where the printed transparent film lifts off the background paper. You can adhere the image to glass, metal or any shiny, smooth object simply by placing it on it and allow it to dry.

Other interesting papers include printable shrink plastic. This paper is loads of fun - you print onto it and cut out your project then place it on a tray in the oven. When heated, the paper shrinks to one third its original size and thickens up so you can use it to make rigid objects such as key-rings and jewellery.

If you're a digital photographer, you have an immediate source of unique art for your projects in the photos you take. Turn a photo into a one-off piece of art by printing it on high quality photo paper or printable canvas and frame it. If you love working with photo-editing programs, why not take a favourite portrait or even a photo of someone's house or new car and turn it into an Andy Warhol style series of multicoloured versions of the image?



Turn a favourite photo into a series of Warhol style images, print them onto photo paper and frame them for a personal gift.



print favourite photos onto these fabrics then use them to make small quilts to be displayed as wall hangings or to appliqué onto store bought cushions. If you're working with a store bought cushion, sew the printed piece onto the cushion with a fancy visible stitch or sew it in place and then cover the edges with a piece of contrasting trim.

Photos printed onto shrink plastic can be cut out and shrunk and then adhered to key chains or earring blanks that you will find in the jewellery supply area of any reputable craft store. Just make sure you punch the holes you'll need in the shrink plastic before you shrink it - it's too hard to work with later on.

If a friend has a favourite quote, why not type it in a program like Word and print it onto bumper sticker paper so they can affix it to their car. You can make faux tattoos for the kids with their favourite animals by printing clip art images onto tattoo paper.

Keep an eye out for the myriad of printable papers available at your stationer and craft supply store and join the ranks of us who will be proud this festive season to say "I made that myself".

By Helen Bradley

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# Alternate inputs

Tired of mousing around? You could memorize a slew of keyboard shortcuts or (gasp, shades of UNIX) go back to the command line. But with most of today's computer interfaces being graphical, a pointing device makes computing life much simpler. And there are alternatives to mousing.

## Trackballs

The trackball has long been a popular alternative to the mouse. Early mouse designs used a rollerball to track movements and the trackball is a kind of an upside-down version of that. Rather than activating the roller ball by moving the mouse, the trackball housing remains stationary and you move the rollerball itself with your thumb or a finger. Like mice, most trackballs are now optical. The ball is imprinted with a fine pattern so the optical sensors can easily capture even slight movements. Trackball advocates say they are easier to control, and aren't as likely to cause repetitive strain injuries.

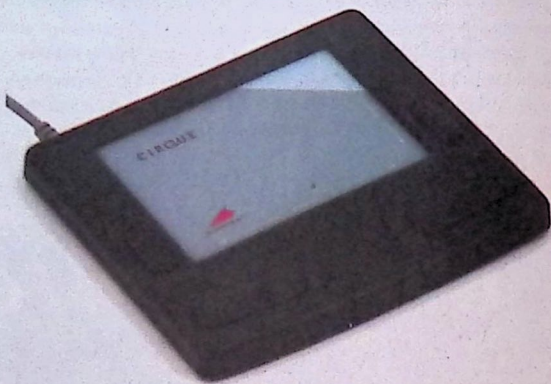


Microsoft and Logitech make trackballs that you can usually find in electronics or office supply stores. Other brands such as Kensington are harder to find but can be found in stores and on web sites that specialize in ergonomic accessories. I'm on my fifth or sixth trackball – I love em.

## Track pads

If you enjoy using that built-in touch-sensitive pad that replaces a mouse on your notebook, you can bring that experience to the desktop. Cirque is a pioneer in touch technology and builds products for cell phones, touch sensitive computer screens etc.

For mouse alternatives, the company has the Easy Cat, Smart Cat and Smart Cat Pro. These have a touch sensitive pad and you control the pointer by moving your finger around the pad. Buttons on the unit work the same as left and right mouse buttons, and depending on the model, you can also have additional buttons that work the same as the ones on multi-button mice. As well, zones in the track pad area are dedicated to certain functions like scrolling or zooming.



## Graphics Tablets

Tablets are conceptually similar to track pads, except you need a stylus rather than your digit to move the pointer. As the name suggests, these products are somewhat specialized for graphics applications. If you like to draw in Illustrator or CorelDraw, or do touchup work in Photoshop, a graphics tablet is far more efficient, accurate and less fatiguing than a mouse. One of the other cool things you can do with a tablet is cursive writing – so you can actually sign a document in your own handwriting without having to first print out a hard copy.

There used to be many graphics tablet makers but the field has thinned so that in most computer and electronics stores you'll find just the Wacom brand. This is not a bad thing because these products are well priced and well manufactured. Graphire4 is the consumer line; Intuos is geared to professionals. Both also come with a mouse that works on the digitizing surface, and a suite of applications.

## Wireless 3D

One interesting product that came to my attention during this gift guide roundup is the Gyration Air Mouse from Thomson Inc. The mouse is unlike any I've seen, being closer to a game controller. You can hold it like a pistol grip, and thus held, your trigger finger sits right against a trigger – or mouse button in this case. Wave it around in your hand, twist your wrist to and fro,

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and the pointer on your computer screen follows your antics. By default when you hit the trigger button the pointer moves and when you release it the pointer locks at that spot. You can then hit the mouse buttons on the top of the unit with your thumb to invoke the usual mouse commands. This system works well because I found that otherwise with my hand in the air, the pointer would drift off the target as I went to hit one of the mouse buttons with my thumb. The hand controller can also be used on a flat

surface like a regular mouse, but I found the shape a bit narrow.

The unit also comes with a compact keyboard (the keys are full size, but there's no separate numeric pad). Both communicate with the computer using a 2.4GHz radio frequency, and a USB transceiver handles the comm duties.

By David Tanaka



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- Support 3.5" Harddrive
- Web-based movie distributor as a set-top box or media gateway.
- Support HDD NTFS/FAT32 file system
- Support MPEG 1, 2, 4 for movie
- Support MP3, WMA for Music
- Support JPG for Photo

Model No: MG-35

### Mediagate MG-350HD

#### Feature Overview

All MG-35 Feature Plus

- Wireless Lan
- USB Host
- HD DVI output
- Full HD play back up to 1920 x 1080p

Model No: MG-350 HD

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#### Feature Overview

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- File and FTP Server All in One
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- Firmware upgrade available
- Hot-swappable
- Aluminum Construction
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- Compatible with all brand 3.5" HDD
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Model No: TS-101

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#### Feature Overview

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- Compatible with all brand 3.5" HDD
- Aluminum Construction
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- 3 Years Warranty

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# An edifying sound experience

## PC speakers from Edifier

High fidelity from PC speakers? To audiophiles, that might be a contradiction in terms, but that hasn't stopped speaker makers from trying.



Some big names in audio have stepped in, joining tech companies like Creative/Cambridge Soundworks and Logitech plus a whole slew of less familiar brands. The happy consequence for us digital denizens is all-round better sound – for our desktop computers and portables as well as digital content devices like iPods and multimedia players.

When a company called Edifier contacted HUB:DL to see if we were interested in reviewing its speaker line, I wasn't expecting too much. I've gone through my share of mediocre no-name speakers, and who'd ever heard of Edifier? Well, I was pleasantly surprised. These compare favourably with the Acoustic Research, Logitech and Creative/Cambridge Soundworks systems I have set up at home.

The company has a broad product range with more than three dozen models for portable and stationary use. Some are recognizable as your typical PC speakers while others are styled like traditional hi-fi bookshelf speakers. The company has 2.1 (left and right satellites plus a subwoofer) and 5.1 surround sound (five satellites and a subwoofer) models plus a line of headphones.

We listened to four samples. With the tone controls set flat, they sounded fair to good (depending on the model), but went from ok to darn good with a bit of tonal contouring with an equalizer. In fact for music listening, I'd recommend using a player with a graphic equalizer such as WinAmp to get the most from these (and PC speakers in general).

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## S2.1D

Price: \$199.99 (from The Source)

The S2.1D reinforces the argument that size matters. The 6.5-inch driver in the subwoofer enclosure gives very good sound. The woofer box itself is as big as a mini-tower case. The satellites are two-way designs housing a three-inch midrange and 0.75-inch tweeter. This unit sounds very good, even with tone controls set flat.

A separate wired control unit is included. A power/function button turns the speakers on or off, and pages through volume, bass, treble, loudness and balance functions while the rotary dial lets you control each setting. This is a smart design, and allows you to control the unit without having to get down to the woofer, where controls are often placed.

The S2.1D includes a 96KHz 24-bit digital processor. Channel inputs are standard RCA jacks, so you could use these with a stereo receiver. It also accepts digital inputs through a coax RCA jack or an optical SPDIF port.

## e3100

Price (from the company's online store): US\$54.99

There are currently four products in the "e" line. These are 2.1 designs. The e3100 uses a five-inch cone in the subwoofer while the satellites contain a three-inch midrange and 0.75-inch tweeter. Frequency response is rated at 48-20,000 Hz. Separate volume, bass and treble rotary knobs are located on the subwoofer enclosure, along with a power switch. These sounded great for a variety of music although the subwoofer gets a bit boomy on some music if the bass control is cranked up

## MP300

Price (from the company's online store): US\$79.99

This 2.1 portable product has style galore, and sounds pretty good too. The subwoofer is shaped like a tube with the port at one end. The satellites are globes slightly smaller than tennis balls, and one of them holds the simple power/volume buttons. The satellites are quite directional so placement will affect your experience. The permanently attached cable lets you separate them by as much as a metre. With no tone controls, these benefit greatly from a player with a graphic equalizer. The frequency response is 75-20,000 Hz so don't expect bone shaking bass response. Nevertheless, they'll definitely enhance the aural experience from your notebook, or portable music player. A bonus is that they come in a zippered fabric carrying case.

## MP200

Price (from the company's online store): US\$27

This all-in-one portable unit follows the rounded block design that has become quite common for MP3 player speakers. The two 1.5-inch cones sound pretty mediocre without tonal contouring but respond well to a bit of low-and-high-end boost – a definite improvement over my ThinkPad's built-in speakers. These require an external power source but come with an AC adapter as well as a cable that lets you tap into the USB port (the two other models in this series can also be run on AA batteries).

By David Tanaka



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# Smartphones spectacular

## Cell-ing the inevitable upgrade

It's time to finally ditch your aging cell phone for one of these sleek new smartphones.

These digital Swiss Army Knives not only place and receive phone calls but are also an efficient messaging solution, Web companion, MP3 player, digital camera, portable television, gaming console and personal digital assistant (PDA).

Some can even shoot and edit high-res video, will help you get from point A to B with integrated GPS reception or download huge files with blazingly fast speeds thanks to HSDPA 3G technology.

Acronym soup aside, here's a quick look at a few of the newest – and smartest – mobile phones on the market.

## A pearl of a phone

The latest BlackBerry Pearl (\$249.99 with three-year Rogers Wireless contract) is the first consumer-focused "push email" solution from Waterloo, Ont.-based Research In Motion. "Push" means messages are sent from the server to your handset in real-time instead of logging onto the Net to "pull" messages down to the phone. Not only is this Bluetooth-enabled phone smaller and thinner than its business-based brethren, but this Pearl also offers an integrated MP3, 1.3-megapixel digital camera and a teeny



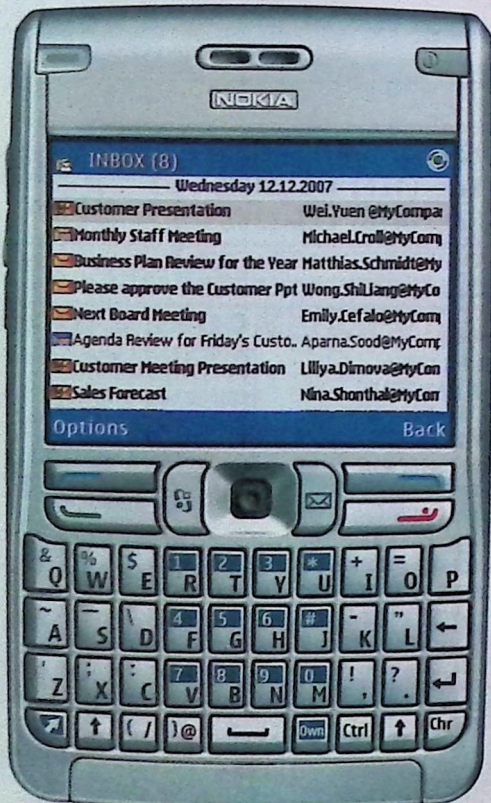
white trackball to navigate through all of its features. Add as much memory as you need through Pearl's mini-SD storage slot. While not a QWERTY key (one letter per button), the Pearl uses a condensed SureType keyboard (two letters per button) that works well after a bit of practice.

## Thin is in

Powered by Windows Mobile 5.0, the Motorola Q (\$249 on a three-year contract with Telus Mobility or Bell Mobility) is billed as the thinnest (11.5mm) handset in the world with a full QWERTY keyboard, which is perfect for writing emails or text messages. The Razr-inspired Q, perhaps named after James Bond's gadget guru, also offers BlackBerry-like thumbwheel navigation to quickly scroll through your inbox and reply to a message, plus it offers a 1.3-megapixel camera, high-resolution colour screen and a mini-SD memory card slot to store files, games or MP3s. Web surfing, emails and handheld downloads will all benefit from the high-speed EV-DO high-speed network.

## Power users, rejoice

While not as svelte as the Q or Pearl, the new BlackBerry 8703e (\$499.95 with three-year contract) with Bell Mobility is designed for serious workaholics on the go thanks to its suite of wireless functions – push email and text-messaging, high-speed Web access, CDMA phone and organizer – complete with full Microsoft Outlook synchronization for all your contacts, calendar entries and tasks. The big, bright and high-resolution LCD colour screen is easy to read indoors or outside, while the ergonomic and backlit QWERTY keyboard and trackwheel makes it a cinch to navigate through programs and then email, IM, surf or work on documents. Hands-free options include speakerphone or Bluetooth 2.0 support for wireless headsets.





#### Delicious pick

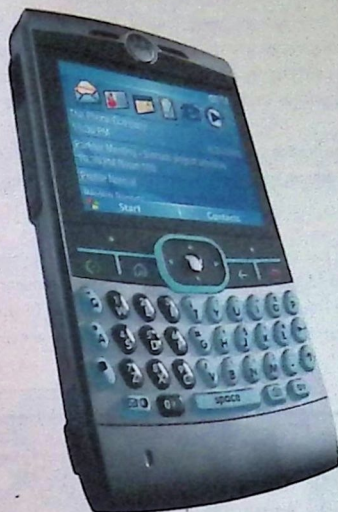
Talk about a sweet phone – the LG Chocolate (LG 8500) phone enjoys a dark, minimalist look with a touchpad that glows red when activated. Available through Telus Mobility (\$99.99 with a three-year contract), this sleek slider handset also offers an integrated MP3/WMA music player, 1.3-megapixel camera (with built-in flash, zoom and up to one hour of video recording) and Bluetooth 1.1 connectivity. You can also send text messages with user-generated sound, photos or videos, all stored on removable and upgradeable microSD memory cards. The LG Chocolate has sold more than a million units since its international launch outside Korea, and is the winner of two global design awards: the 2006 iF Design Award and Reddot Design Award.

#### World mate

If you're in the market for a push-email solution, but decide against a "CrackBerry," the Nokia E62 (\$249.99 with a three-year Rogers Wireless agreement) offers real-time push email, delivered by Rogers MyMail, so you can get your personal or corporate email, whenever and wherever. Thanks to its bright 2.8-inch display (with 16 million colours), Web surfing or document viewing/editing is also ideal on this QWERTY-based handset. Traveling around the world? No problem – this quad-band phone can be used in more than 200 countries, while EDGE

network support means fast surfing and downloads when in coverage areas. Other features include 14 days of standby time (or up to six hours of talk time), five-way conference calling and built-in MP3 player (music is stored on mini-SD cards).

By Marc Saltzman



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# Mobile media madness

## A look at 5 hot portable players

If you want to see how far consumer tech has evolved over the past few years, look no further than the portable MP3 player.

It wasn't too long ago we were buying 32MB devices that stored a whopping 10 songs [can you imagine?]. Fast-forward to today and 80GB iPods not only carry up to 20,000 tunes, but they also play videos and games, display photos and mix a mean martini (ok, so we made up the last one).

Whether you're in the market for your first (or next) iPod, or another portable media player, the following is a look at a few rocking suggestions.

### Still the king

Often imitated but never duplicated, the Apple iPod – available in 30GB (\$299) or 80GB (\$399) – lets you carry and enjoy thousands of media files, be it audio (music, podcasts, audiobooks), video (TV shows, movies, music videos, camcorder footage) and photos which you can view one by



one in or in a slideshow set to music. The new iPods also offer a handful of improvements over past iterations, such as longer battery life (up to 20 hours for audio), a much brighter LCD screen and new ways to quickly search through all of your media. What's more, your iPod can now download games (\$5.99 apiece) from the iTunes store, including Zuma, EA Mini Golf, Pac-Man, Bejeweled and Texas Hold'em.

### Wear your stilettos

XM Satellite Radio subscribers had it good this year as they could carry their tunes (or talk) with them wherever they were thanks to the Pioneer Inno, a handheld sat radio and MP3 player in one. Now, Sirius Satellite Radio subscribers can do the same thing – and on a much cooler device. The Stiletto 100, which refers to how many hours of satellite radio you can record and playback at a later time, also offers integrated Wi-Fi to stream Sirius radio when indoors (wireless network required). Hear a tune you like and



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press the Love button underneath the 2.2-inch colour screen and you can save these individual songs separately. You can also play your favourite MP3 or WMA files. Price for the Stiletto 100 is \$449.99, plus \$14.99 a month for Sirius Canada subscription.

#### Widescreen wonder

Media lovers who want a big screen experience out of their pocket player should opt for the new Creative Zen Vision W (\$359.99 for 30GB, \$479.99 for 60GB). Unlike the iPod's 2.5-inch display, the Vision W offers a stunning high-resolution, 4.3-inch colour widescreen (16:9 format) display to better enjoy your videos and photos. Other features not found in the iPod include: a built-in microphone; FM radio; loud external speaker (when you don't feel like wearing earphones); video out jack to connect to a television; a Compact Flash memory card reader to view or copy photos from a digital camera over to the Zen W's hard drive; and support for multiple video codecs (including MPEG-1, MPEG-2, MPEG-4 SP, DivX 4 and 5, XviD, WMV and AVI). The 60GB player supports up to 15,000 songs or up to 240 hours of video (depending on the codec and quality of compression).

#### Loud and proud

Samsung's "nano killer" is the YP-K5, a tiny (98 x 47.5 x 18.1 mm) and stylish Flash memory player that has a surprising little twist: a hidden stereo speaker that cleverly slides up so you can enjoy your favourite music

without earphones. The slide-out speaker is also used to prop up the device on, say, a desk, to listen to while working. Or why not create a slideshow with a couple of button presses? Load up your tunes and enjoy your photos on its bright 1.71-inch full colour OLED screen (128 x 160 pixels). Other features include a super slick interface, FM radio, alarm function and audio support for MP3, WMA, OGG and ASF files. Bundled accessories include a software CD, earphones and USB cable. The YP-K5 is available in 1GB or 4GB sizes; available for \$179.99 or \$299.99 respectively.

#### Coming Zune

In early 2007, Microsoft will launch its first digital media device. While price is still to be determined, the Zune – available in black, white or brown – is a 30GB hard-drive based media player with a 3.0-inch screen (viewable in portrait or landscape modes); the pocket-sized player supports up to 7,500 songs, 25,000 photos or up to 100 hours of video, but more importantly, the Zune is determined to separate itself from the pack by encouraging sharing between friends. That is, integrated wireless technology means you can share selected full-length songs or custom playlists to a nearby Zune. To prevent piracy, the recipient of the song can listen to the track up to three times in three days. After that you can flag to purchase it online the next time you sync with your PC. The Zune will also have a built-in FM tuner.

By Marc Saltzman





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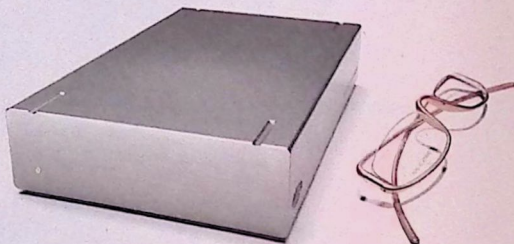


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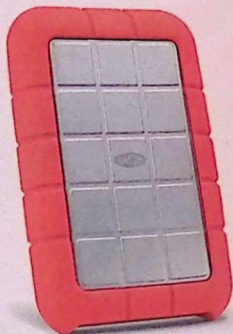


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